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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/515,285	02/29/2000	Toshiya Fukuhisa	NAK1-BK00	2072

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EXAMINER

NGUYEN, TUAN M

ART UNIT

PAPER NUMBER

2828

DATE MAILED: 07/31/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Applicant(s)

09/515,285

FUKUHISA ET AL.

Examiner

Tuan M Nguyen

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☐ Responsive to communication(s) filed on 29 February 2000.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-36 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-36 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

  
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TECHNOLOGY CENTER 2800

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.  
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☒ All b) ☐ Some \* c) ☐ None of:  
1. ☒ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
\* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).  
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)  
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)  
3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 3.

- 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_.  
5) ☐ Notice of Informal Patent Application (PTO-152)  
6) ☐ Other: \_\_\_\_\_

## DETAILED ACTION

### *Drawings*

1. The drawing (figs 1-7) is objected for minor informaty. The boxes show in figures 1-7 are not labeled as required by 37 CFR 1.83(a). Applicant is required to submit a drawing correction for approval as require by rule 37 CFR 1.123

### *Claim Rejections - 35 USC § 102*

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1, 15-24 are rejected under 35 U.S.C. 102(b) as being anticipated by Naito et al (US patent 5,776,792).

With respect to claim 1, Naito et al discloses a method for forming semiconductor laser device comprises n-type semiconductor substrate (1A), n-type cladding (3A), an active layer (4A), a p-type cladding (5A), a p-type buried cladding (7A), a current blocking (15), note cols. 1-16, see figs 1-9.

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FIG. 1

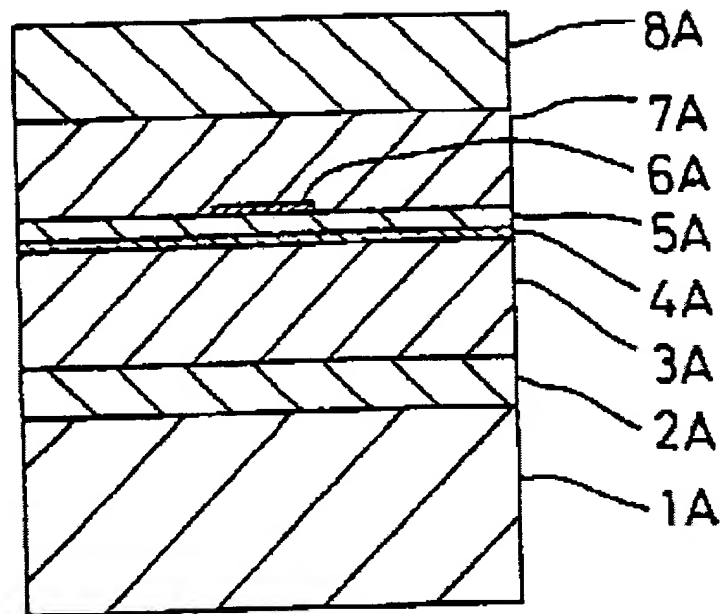
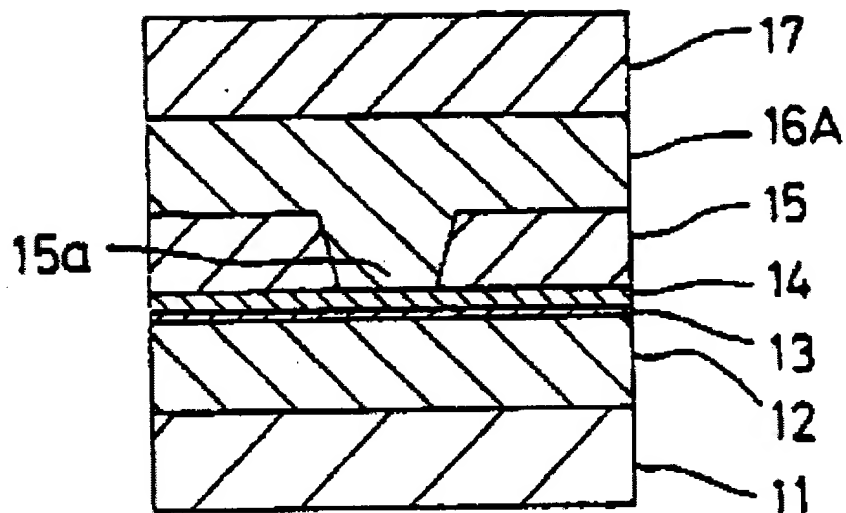


FIG. 9  
PRIOR ART



With respect to claims 15-24, Naito et al discussed all about the p-type buried cladding layer has refractive index higher than the current blocking layer, note cols 15-23.

***Claim Rejections - 35 USC § 103***

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

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4. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

5. Claims 2- 4, 7-10, 25-28 and 31-34 are rejected under 35 U.S.C. 103(a) as being unpatentable over Naito et al (US patent 5,776,792) in view of Hata (US patent 6,369,506 B1).

With respect to claim 2, Naito et al discussed all above except for the concentration of n-type carriers in the of the first and second layers being N1 and N2. Whereas Hata discussed about the concentration of n-type carriers of the first and second layers being N1 and N2, note cols. 4-5. For the benefit of the concentration of n-type carriers of the first and second layers being N1 and N2, it would have been obvious to one having ordinary skill in the art at the time the invention was made to provide Naito with the concentration of n-type carriers of the first and second layers being N1 and N2 as taught or suggested by Hata.

With respect to claims 3 and 4, Naito et al discussed all above except for the first layer has a different composition to the second layer. Whereas Hata discussed about the first layer has a different composition to the second layer, note cols. 2-3. For the benefit of the first layer has a different composition to the second layer, it would have been obvious to one having ordinary skill in the art at the time the invention was made to provide Naito with the first layer has a different composition to the second layer as taught or suggested by Hata.

With respect to claims 7-10 and 31-34, Naito et al discussed all above except for the value of N1 and N2. Whereas Hata discussed about the value of N1 and N2, note cols. 2-6. For the benefit of the value of N1 and N2, it would have been obvious to one having ordinary skill in the art at the time the invention was made to provide Naito with the value of N1 and N2 as taught or suggested by Hata.

With respect to claims 25 and 26, Naito et al discussed all above except for the concentration of n-type N1 and N2. Whereas Hata discussed about the concentration of n-type N1 and N2, note cols. 2-6. For the benefit of the concentration of n-type N1 and N2, it would have been obvious to one having ordinary skill in the art at the time the invention was made to provide Naito with the concentration of n-type N1 and N2 as taught or suggested by Hata.

With respect to claims 27 and 28, Naito et al discussed all above except for the first layer from a different composition of materials to the second layer. Whereas Hata discussed about the first layer from a different composition of materials to the second layer, note cols. 2-4. For the benefit of the first layer from a different composition of materials to the second layer, it would have been obvious to one having ordinary skill in the art at the time the invention was made to provide Naito with the first layer from a different composition of materials to the second layer as taught or suggested by Hata.

6. Claims 5-6 and 29-30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Naito et al (US patent 5,776,792) in view of Hata (US patent 6,369,506 B1) further in view of Tanaka et al (US patent 6,377,596 B1).

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With respect to claims 5 and 29, Naito et al and Hata discussed all above except for the p2 concentration of p-type carriers. Whereas Tanaka et al discussed about the p2 concentration of p-type carriers, note cols. 5-6. For the benefit of the p2 concentration of p-type carriers, it would have been obvious to one having ordinary skill in the art at the time the invention was made to provide Naito with the p2 concentration of p-type carriers as taught or suggested by Tanaka.

With respect to claims 6 and 30, Naito et al discussed all above except for the value of N1 and N2. Whereas Hata discussed about the value of N1 and N2, note cols. 4-6. For the benefit of the of the value of N1 and N2, it would have been obvious to one having ordinary skill in the art at the time the invention was made to provide Naito with the value of N1 and N2 as taught or suggested by Hata.

7. Claims 11-14, 35-36 are rejected under 35 U.S.C. 103(a) as being unpatentable over Naito et al (US patent 5,776,792) in view of Yoshizawa et al (US patent 4,800,565).

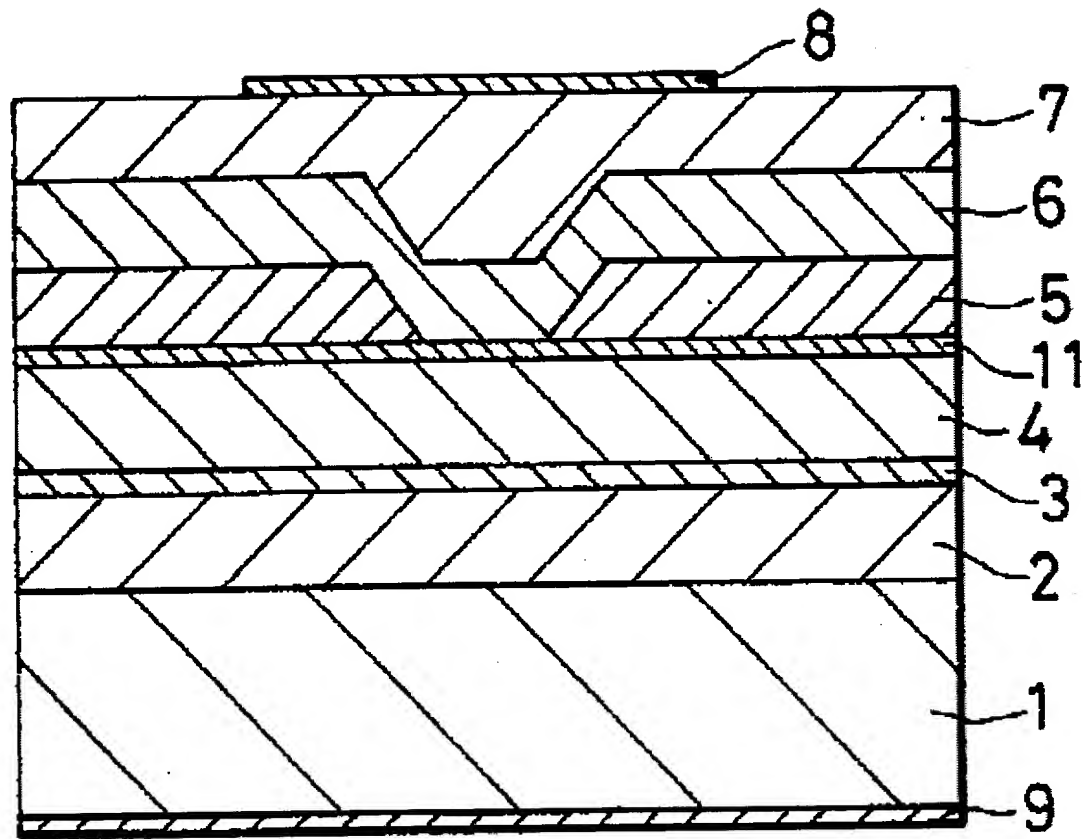
With respect to claim 11, Naito et al discussed all above except for the current blocking interface between p-type cladding and p-type buried cladding. Whereas Yoshizawa discussed about the current blocking interface between p-type cladding and p-type buried cladding, note col. 3, see fig 1. For the benefit of the current blocking interface between p-type cladding and p-type buried cladding, it would have been obvious to one having ordinary skill in the art at the time the invention was made to provide Naito with the current blocking interface between p-type cladding and p-type buried cladding as taught or suggested by Yoshizawa.



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With respect to claim 12, Naito et al discussed all above except for the interjacent layer being positioned between the current blocking and p-type cladding. Whereas Yoshizawa discussed about the interjacent layer (11) being positioned between the current blocking (5) and p-type cladding (4), note col. 3 , see fig. 1. For the benefit the interjacent layer being positioned between the current blocking and p-type cladding, it would have been obvious to one having ordinary skill in the art at the time the invention was made to provide Naito with the interjacent layer being positioned between the current blocking and p-type cladding as taught or suggested by Yoshizawa.

**FIG. 1**



With respect to claims 13 and 14, Naito et al discussed all about the p-type buried cladding layer has refractive index higher than the current blocking layer, note cols 15-23.

With respect to claims 35 and 36, Naito et al discussed all above except for the interface between the p-type cladding base layer and the p-type buried cladding layer. Whereas Yoshizawa discussed about the interface between the p-type cladding base layer and the p-type buried cladding layer note col. 3-4, see fig. 1. For the benefit of the interface between the p-type cladding base layer and the p-type buried cladding layer, it would have been obvious to one

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having ordinary skill in the art at the time the invention was made to provide Naito with the interface between the p-type cladding base layer and the p-type buried cladding layer as taught or suggested by Yoshizawa.

### **Citation Of The Pertinent References**

8. The prior art made of record and not relied upon is considered pertinent to applicant's disclose.

The patent to Kidoguchi et al (US patent 6,373,874 B1) discloses semiconductor laser and optical disk device using the laser.

The patent to Adachi et al (US patent 6,081,541) discloses semiconductor laser device and optical disk apparatus using the same.

The patent to Ashida (US patent 5,949,809) discloses semiconductor laser device and method for manufacturing the same.

The patent to Yodoshi et al (US patent 5,506,170) discloses method of making a semiconductor laser with a self-sustained pulsation.

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***Communication Information***

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tuan M Nguyen whose telephone number is (703) 306-0247.

The examiner can normally be reached on 8am to 5pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Paul Ip can be reached on (703) 308-3098. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 306-5511 for regular communications and (703) 306-5511 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 306-3329.



Paul Ip  
SPE  
Art unit 2828

TMN  
July 22, 2002